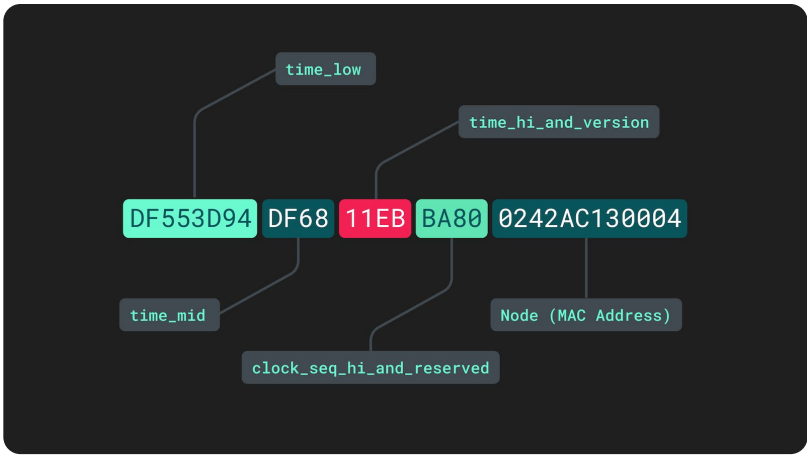
ENGINEERING — July 12, 2021

# What is a UUID?

The challenge of identifying data shared between systems dates back to the advent of networked computing. One of the earliest solutions to this problem, the Universally Unique Identifier (UUID), is still in wide use today. Here, we'll explore this ever-present data identifier in detail.

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SHARE

Prior to the 1980s, computers were largely antisocial creatures. They lived in isolation, not speaking or interacting with each other at all. The information they housed never left the confines of the hardware that stored it, and to "share" data was to physically bring a computer to another location. Although pre-networked computers were wondrous machines for their time, their muteness imposed a severe limitation on their utility.

A company called Apollo Computer, founded in 1980, set out to change this. One of the earliest innovators in this space, Apollo laid the foundation for an era of rapid growth in computer networking by creating the Networked Computing System (NCS), a set of tools and protocols that helped software developers build "distributed" applications through which computers on the same network could share data. One standard the NCS laid out was a system for labeling information in order for it to be recognized when shared between machines, and thus the concept of the UUID was born.

## What is a UUID?

A Universally Unique Identifier (UUID) is a 36-character alphanumeric label used to provide a unique identity to any collection of information within a computing system. Owing to their extremely low probability of duplication, UUIDs are a widely adopted tool for giving persistent and unique identities to practically every type of data imaginable.

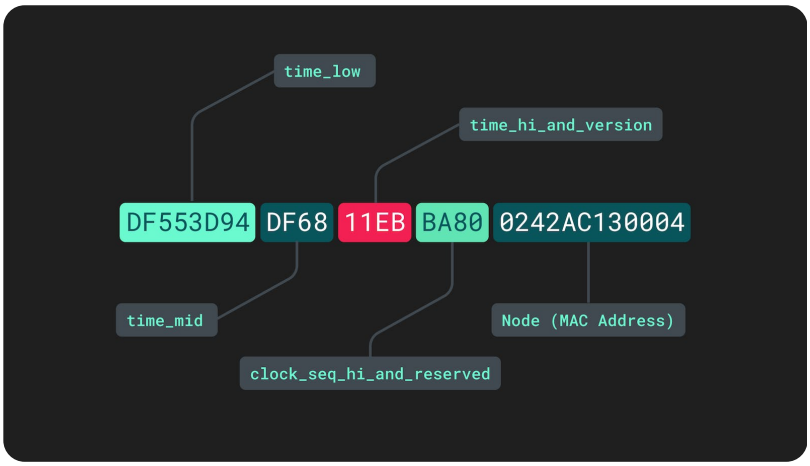
The specifications and format of UUIDs have evolved since this earliest iteration in the NCS, but the core features remains the same: UUIDs are easy to generate, truly *unique*, and simple for applications to support and parse. For these reasons, they are widely adopted across applications from social networks to data warehouses.

## UUID versions

Today there are five different UUID versions. Each version has slightly different strengths, and therefore may be suited for different use cases. Here is a breakdown of the main differences,  and characteristics of the different UUID versions:

**Version 1 and 2**

Version 1 UUIDs are sometimes referred to as being “time-based” since they incorporate the datetime at which they were generated. In addition to the datetime, the final section of these UUIDs is derived from the media access controller (MAC) address of the generating device. They consist of five separate sections separated by hyphens:




Different sections of a version 1 UUID.

The *time_low*, *time_mid*, and *time_high_and_version* sections pertain to the low, medium, and high timestamps within the